

# Free software / Open Source

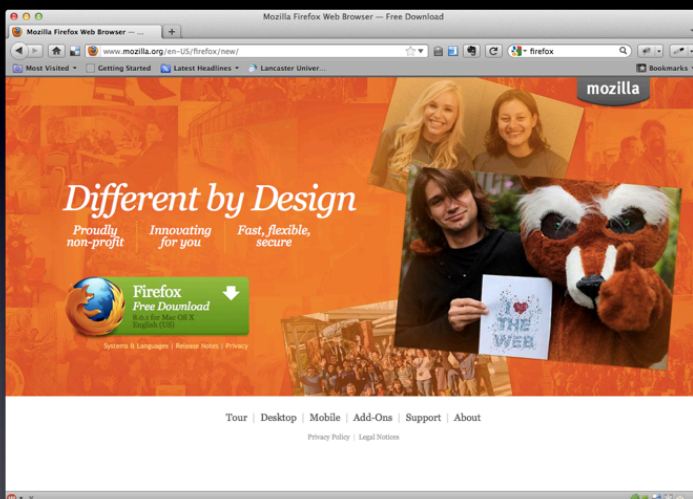
- What is the free software movement / Open Source?
- History
- Consequences in the market

Quoted by Microsoft as its biggest commercial threat

## What is Free Software?

- Both the source code and executable code are freely (and widely available) for anyone to use

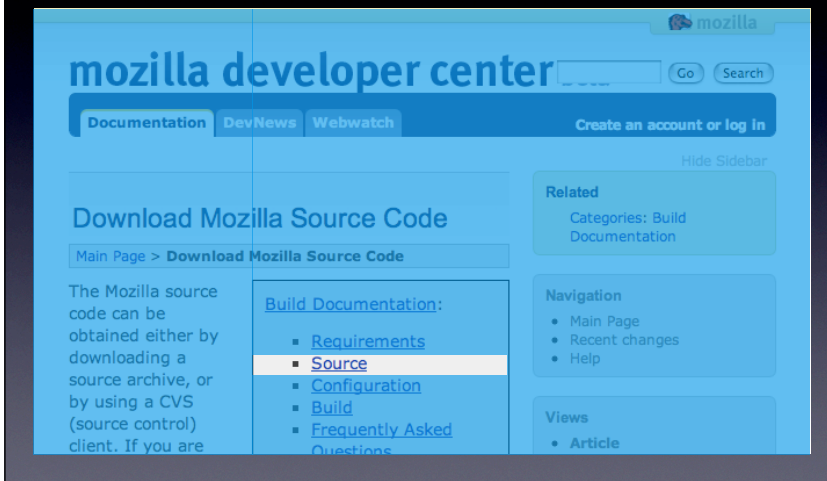
## Example - Firefox



## Example - Firefox



## Example - Firefox



“Free” ?

- Free as in “free speech”
- Not free as in “free beer”

## Software license

- There are some restrictions on use
- Terms and conditions are attached to “free software” to ensure its continuance

## Software license

- Open Source/free software is distributed under the terms of a ‘Free software licence’

**GNU GENERAL PUBLIC LICENSE**

Version 3, 29 June 2007

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**Preamble**

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program—to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to

## Traditional software creation process

```
function resizePage() {  
  if (bIsIE) {  
    iCenterX = (document.body.c  
    iCenterY = (document.body.c  
    if (!bRunning) {  
      for (var iThp=1; iThp<=  
        document.getElement  
        document.getElement  
      )  
    }  
  }  
}
```

- Write source code

Compilation

1010100101001001010100101  
0101010101010101010101010  
1010101010101010101010101  
0101010101010101010101010  
1010101010101010101010101

- Sell ‘executable code’



```
function resizePage() {
  if (bIsIE) {
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    iCenterY = (document.body.c
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        document.getElement
    }
  }
}
```

Compilation

- 'compilation process' is one way only

```
1010100101001001010100101
0101010101010101010101010
1010101010101010101010101
0101010101010101010101010
1010101010101010101010101
```

```
function resizePage() {
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        document.getElement
    }
  }
}
```

Compilation

- Companies 'hoard' the source code and use copyright law to stop redistribution of executable code

```
1010100101001001010100101
0101010101010101010101010
1010101010101010101010101
0101010101010101010101010
1010101010101010101010101
```

## Traditional software creation process

- Write source code
- Compile to executable code
- Sell 'executable code'
- Sell support, documents and training

## Sell support, documents and training

**Microsoft** Search Microsoft.com for: \_\_\_\_\_

**Help and Support**

Help and Support Home | Select a Product | Advanced Search

**Top Solution Centers**

- 2007 Office Suites
- Internet Explorer 7
- Microsoft Update
- Office 2003
- Outlook 2007
- Outlook Express 6.0
- Windows 2000
- Windows Server 2003
- Windows Vista
- Windows XP
- More Solution Centers

**Support Options**

- Self Support Options
- Downloads & Updates
- Microsoft Services
- Contact Microsoft

**Welcome to Microsoft Support**

**Top customer issues and solutions**

- [Get guided help when Internet Explorer crashes or hangs](#)
- [Stay current with the latest Windows XP service pack](#)
- [Find the Windows Installer CleanUp Utility](#)
- [Download updates for Windows Vista](#)
- [Update your computer for daylight saving time](#)
- [Supported Windows Media Player file formats](#)

**Most popular solution centers**

- [Windows Vista Solution Center](#)
- [Windows Internet Explorer 7 Solution Center](#)
- [Windows XP Solution Center](#)
- [Office 2003 Solution Center](#)
- [E-mail Solution Center](#)

## Sell support, documents and training

**Microsoft** Learning Search Microsoft.com for: \_\_\_\_\_ Go

Learning Home | Worldwide Sites

Learning Manager

**Learning & Reference**

- Microsoft Training
- Microsoft Press Books
- Skills Assessments

**Certification**

- Microsoft Certifications
- Exams

**Information For**

- IT Professionals
- Developers
- Home & Office Users
- Business Managers
- Educators
- Beginners

**Community**

- Patterns & Practices
- Solutions Accelerators
- Learning Support
- Program Opportunities
- Worldwide Sites
- Customer Evidence

**New and Upcoming Titles**

Hot off the Press! Check out new and upcoming titles three weeks before they hit the shelves, plus any we've released in the past couple of months.

Developer Titles	Release Date
<a href="#">Programming the Microsoft® ADO.NET Entity Framework</a>	07/09/2008
<a href="#">How We Test Software at Microsoft®</a>	06/11/2008
<a href="#">Hollywood Secrets of Project Management Success</a>	06/04/2008
<a href="#">Windows® Internals, Fifth Edition</a>	05/28/2008
<a href="#">Programming Microsoft® LINQ</a>	05/14/2008
<a href="#">Inside the Index and Search Engines: Microsoft® Office SharePoint® Server 2007</a>	04/09/2008
<a href="#">Simple Architectures for Complex Enterprises</a>	04/02/2008
<a href="#">Windows® Presentation Foundation: A Scenario-Based Approach</a>	03/26/2008
<a href="#">Getting Results from Software Development Teams</a>	03/12/2008
<a href="#">Programming Microsoft® Robotics Studio</a>	03/05/2008
<a href="#">Programming Microsoft® Office Business Applications</a>	03/05/2008
<a href="#">Working with Microsoft Dynamics™ CRM 4.0</a>	02/27/2008
<a href="#">Introducing Microsoft® Silverlight™ 1.1 Beta Edition, Second Edition</a>	02/27/2008
<a href="#">Microsoft® Visual C#® 2008 Express Edition: Build a Program Now!</a>	02/27/2008
<a href="#">Microsoft® Visual Basic® 2008 Express Edition: Build a Program Now!</a>	02/27/2008
<a href="#">Microsoft® ASP.NET 3.5 Step by Step</a>	02/13/2008
<a href="#">JavaScript™ Step by Step</a>	02/13/2008

## Sell support, documents and training

**Microsoft** Learning Search Microsoft.com for: \_\_\_\_\_ Go

Learning Home | Learning Manager

**Learning & Reference**

- Microsoft Training
- Microsoft Press Books
- Skills Assessments

**Certification**

- Microsoft Certifications
- Exams

**Information For**

- IT Professionals
- Developers
- Home & Office Users
- Business Managers
- Educators
- Beginners

**Community**

- Patterns & Practices
- Solutions Accelerators

**Learning Manager**

- Overview
- Manage My Learning
- Learning Catalog

**Certifications Overview**

- Certifications Overview
- Available Certifications
- Exams Overview
- Search for an Exam

**Training Resources**

- Find Training
- Classroom Training
- Microsoft Official Distance Learning
- Microsoft e-Learning
- Microsoft Press Books

**Member Resources**

- MCP Members Site
- MCT Members Site
- Learning Solutions Member Site
- Microsoft Dynamics Member Site

**Get a free Second Shot at Microsoft Certification.**

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**For IT Professionals** **For Developers**

## Free software creation process

- Write source code
  - Distribute source & executable code
    - Sell code, support, documents and training
- Source code must be available somewhere (typically the Internet)

## Free software evolves

- More like the traditional scientific model
- New ideas or concepts built on previously constructed ideas or concepts
- Peer appraisal (suggestions and modifications) incorporated back into project
- Ensures that software has features that the clients want

- One of the key advantages over the closed source model
- Free software projects are claimed to have better reliability
- “All bugs are shallow to many eyes” - Eric Raymond



## Who pays for development?

- Code written by corporations, organisations or hobbyists
- Or combinations of the above

## Example

- Sun funded the development of OpenOffice

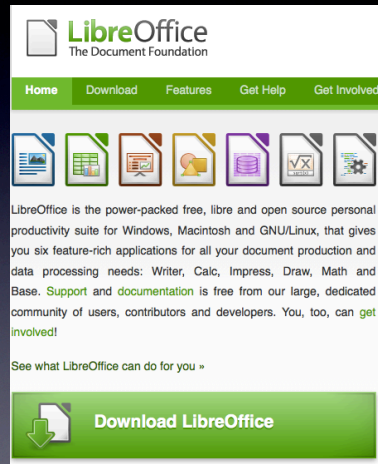


- Sun then sold a commercial version of the suite, with extras, support, training and documentation

A screenshot of the StarOffice Software website. The page is titled 'StarOffice Software' and features three main product offerings, each with a corresponding image of the software box and a list of actions: 'Download', 'Get Support and Services from Sun'. The first offering is 'THE AFFORDABLE ALTERNATIVE TO MICROSOFT OFFICE' (StarOffice 9). The second offering is 'FULL FEATURED OFFICE SUITE FOR ASIAN LANGUAGES' (StarSuite 9). The third offering is 'THE FREE OFFICE PRODUCTIVITY SOFTWARE SUITE' (OpenOffice.org). The OpenOffice.org logo is visible in the top right corner of the third offering's section.

- Open Office now forked

- Oracle bought Sun  
- many of the  
developers moved  
over to new project  
(same code base)



## The GNU General Public License

- Free software is distributed under the GNU GPL
- Has a number of criteria that must be followed if the software is to be used in any way

### *Free redistribution*

- The licence may not restrict any party from selling or giving away the software

## The GNU General Public License licence

### *Source code*

- Program must either include the source code and allow distribution of source code

*Or*

- Must include a well publicised means of obtaining the source code (frequently done through the Internet)



## The GNU General Public License

### *Derived works*

- The licence must allow modifications and derived works must be distributed under the same terms as the licence of the original software

### *No discrimination*

- No discrimination against persons, groups or fields of endeavour

## The GNU General Public License licence

### *Licence must not be specific to a product*

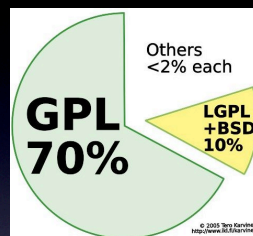
- Rights attached to a program must not depend on the program being part of a particular distribution

### *Licence must not contaminate other software*

- The licence must not place restrictions on other software that is distributed along with the licenced software

## Other licenses

- Many other licenses of similar types

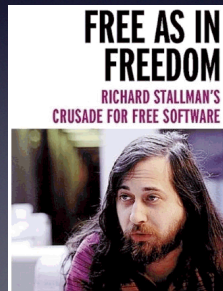


## Free software Vs Open Source

- From a users perspective, Open Source / Free software quite close at the moment
- Different and becoming more so ...

## Free software

- Advocated by the Free Software Foundation (1985)
- Has a more political aim
- Leading figure - Richard Stallman



## Free software

freedom 0	The freedom to run the program, for any purpose
freedom 1	The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this
freedom 2	The freedom to redistribute copies so you can help your neighbor
freedom 3	The freedom to improve the program, and release your improvements to the public, so that the whole community benefits



## Open Source

- Invented in 1998 as a marketing term
- Describes a development model and characteristics of Open Source licenses
- Look at [www.opensource.org](http://www.opensource.org)

FLOSS	Free/Libre/Open Source
FOSS	Free/Open Source

- Generic terms in common use

- DRM and patents are divisive issues
- GPL 3 - has anti DRM clauses



## Digital Rights Management (DRM)

- A way to manage the ways that a file may be used

Prevent playback  
after a certain time

Prevent playback on  
unauthorised  
devices



Prevent playback  
after a certain  
number of times

## Digital Rights Management (DRM)

- Note that such systems do NOT prevent copying  
.. just the playback
- Apples Fairplay, Microsofts Plays For Sure + many others

## How is this an issue for FLOSS?



Tivoization  
(2006+)



## How is this an issue for FLOSS?

### Free software community

- Generally opposed
- GPL 3 - has anti DRM clauses

### Open Source community

- Generally neutral

## Patents (USA)

- Software patents started to be granted after 1981

Supreme Court case, Diamond v. Diehr

## *Software Patents*

- In fact - various definitions

...is a patent on any performance of a computer realised by means of a computer program

...is an invention whose implementation involves the use of a computer, computer network or other programmable apparatus, the invention having one or more features which are realised wholly or partly by means of a computer program



## Software Patents

- For full versions of the *for* and *against* arguments, see

[http://en.wikipedia.org/wiki/Software\\_patent\\_debate](http://en.wikipedia.org/wiki/Software_patent_debate)

## Software Patents

- Whether pro or against, most people agree that Software Patents are being granted for “obvious” ideas
- Consider: Amazons One Click shopping

## Software Patents

Click to **LOOK INSIDE!**

**Accounting, 2nd Edition [Paperback]**  
Michael Jones (Author)  
★★★★★ (1 customer review) Like (0)

RRP: ~~£39.99~~  
Price: **£29.29** & this item **Delivered FREE in the UK** with Super Saver Delivery. [See details and conditions](#)  
You Save: **£10.70 (27%)**

**In stock.**  
Dispatched from and sold by Amazon.co.uk. Gift-wrap available.

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29 new from £27.50 13 used from £19.99

Quantity: 1

**Add to Basket**

or

**Buy now with 1-Click®**

Dispatch to:  
Barry Avery

☐ Add giftwrap/message

or

**Add to Basket with FREE One-Day Delivery**

Amazon Prime free trial required. Sign up when you check out. [Learn more](#)

**Add to Wish List**

- Basically a button on a form that initiates the financial transaction straight away



## Software Patents

- Ideas or concepts that predate 1981 are not patentable due to prior art
- Consider - Visicalc

### Visicalc (1979)

- First ever spreadsheet



Rows  
Cells  
Formula

Columns  
Text  
Formula bar

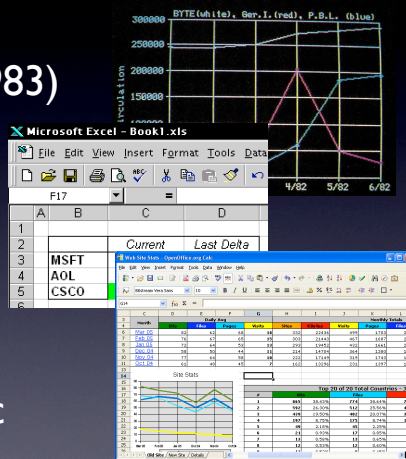
Cursor  
Values  
Save/Load files

- But invented before software patents  
so...

### Lotus 1-2-3 (1983)

### Microsoft Excel (1987)

### Open Office (2000) - Calc



## Current situation in Europe

- Software patents still not granted in Europe
- Many attempts at getting legislation passed
  - previous attempt July 2005

Computer Implemented Inventions Directive

## How is this an issue for FLOSS?

Some patent claims may exist against GPL'd software

Users or software groups deriving other software may have to pay the patent holder

## How is this an issue for FLOSS?

Microsoft claims to hold 200 patents used in Linux

Refuses to say which ones!



## Solutions?

GPL 3 states that if software is licensed under GPL, patent rights are granted

If patents are found, FLOSS advocates say that the software will be rewritten very quickly

## Skills, tools and requirements for FLOSS

### *To start the momentum*

- Interest from a small community (probably technical)
- Weakness in a closed source technology
- Could be expensive, lacking facilities, buggy or not supported to the degree expected by users
- Rapid release cycle to maintain interest and make users / developers feel involved

## Skills, tools and requirements for FLOSS

### *To develop*

- Tools to allow shared parallel development of code (Commonly CVS)
- Version control mechanisms
- Internet interface

### *To promote*

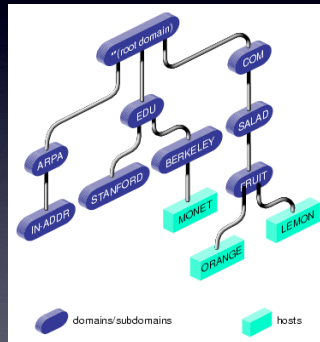
- Could be a website ([www.freshmeat.org](http://www.freshmeat.org))



## FLOSS Products (a selection)

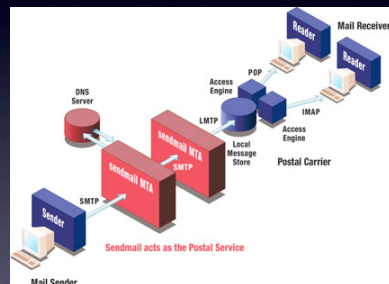
### *Internet software and protocol implementations*

- *bind* provides the domain name service for much of the Internet backbone



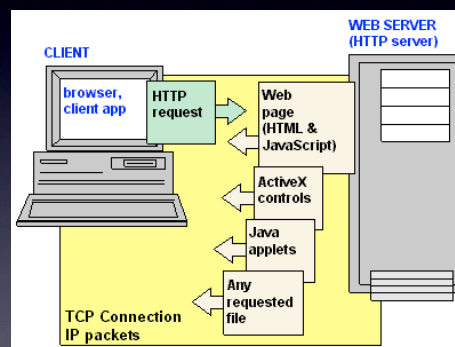
### *Internet software and protocol implementations*

- *sendmail* the most common email transport software



### *Internet software and protocol implementations*

- *apache* the most common web server
- *php*, *perl*, *python* common web programming languages



### *Office products*

- *Firefox, Chrome* alternative web browser
- *LibreOffice* fully featured Office suite
- *mySQL, mSQL* database products

Thousands of other products are promoted on freshmeat

### *Operating Systems*

- *Linux* probably the most widely known open source product
- Actually a huge collection of software and an Operating System
- *Mac OS X* has an open source Operating System at its core
- *Android* - Googles OS for mobile devices

So: Microsoft Office

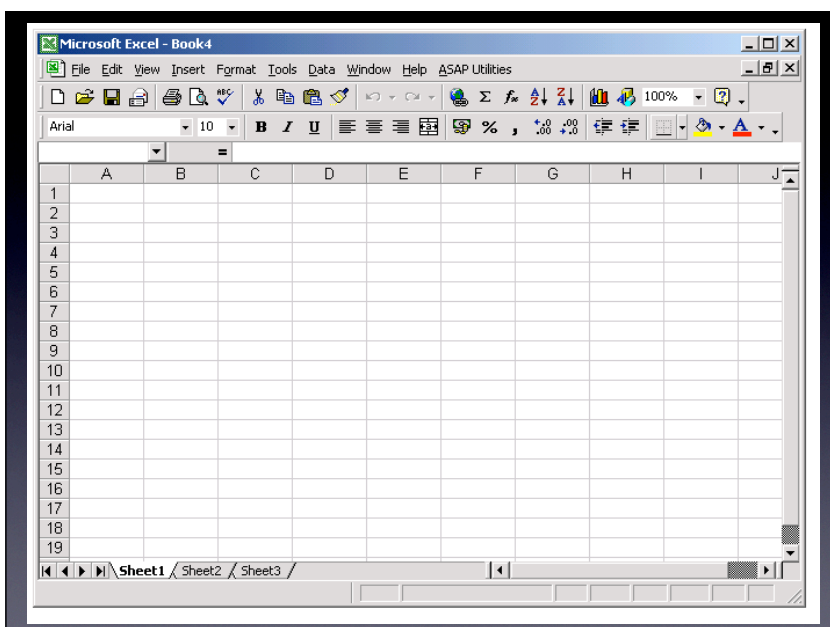
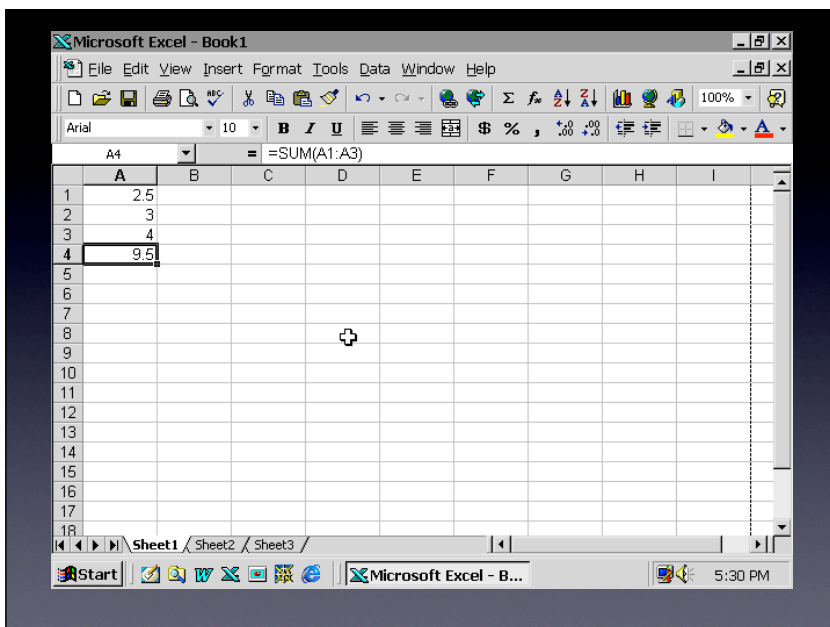
### *Pros*

- Fully featured complete Office suite
- Fully integrated with OS
- Most popular Office suite in the world
- Wide support and common file formats
- Internet / Group functionality included in recent versions

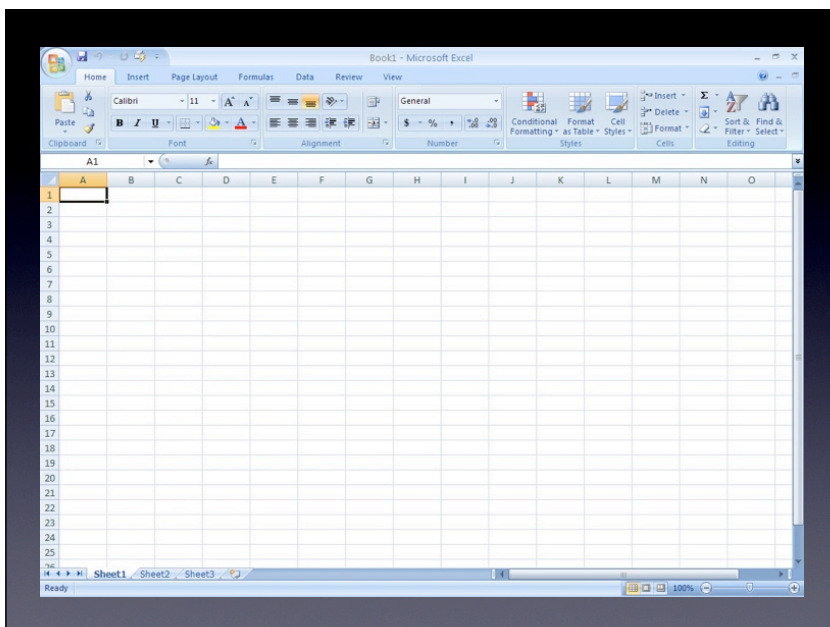
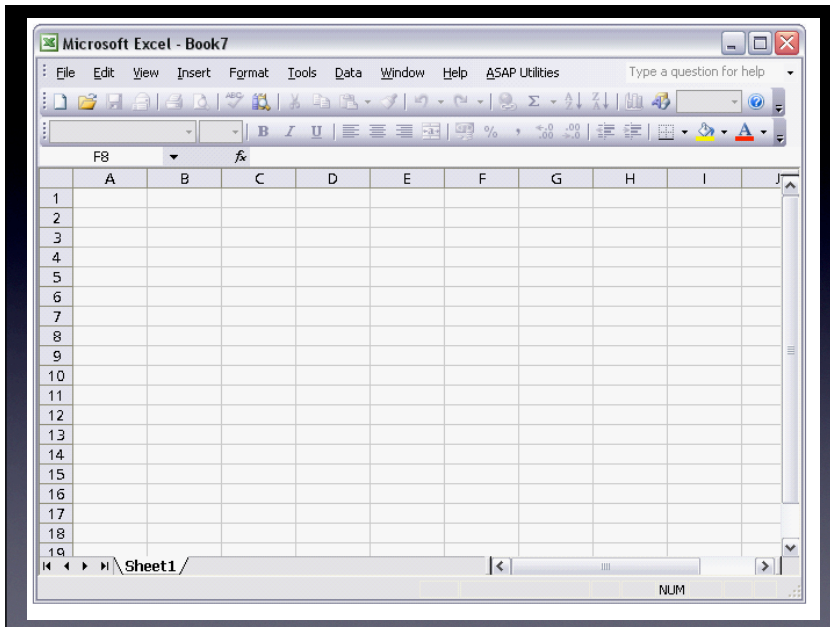
## So: Microsoft Office

### Cons

- Expensive
- Changes to interface dependant upon OS platform
- Changes to file format common between versions
- Little changes to the core functionality



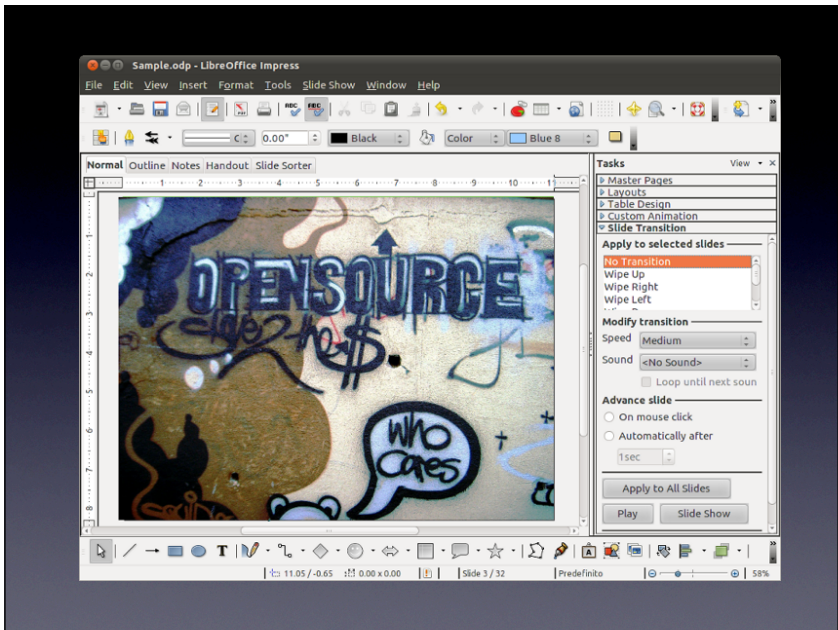
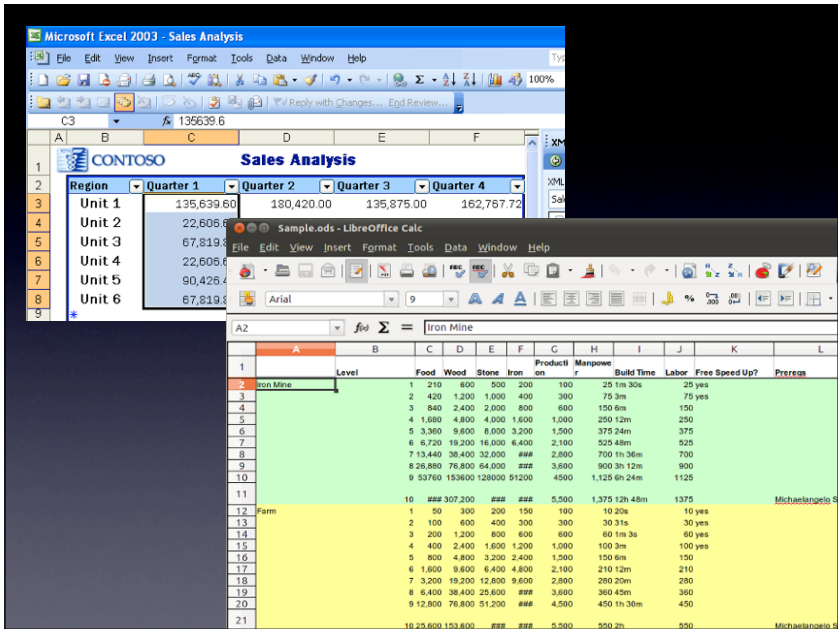
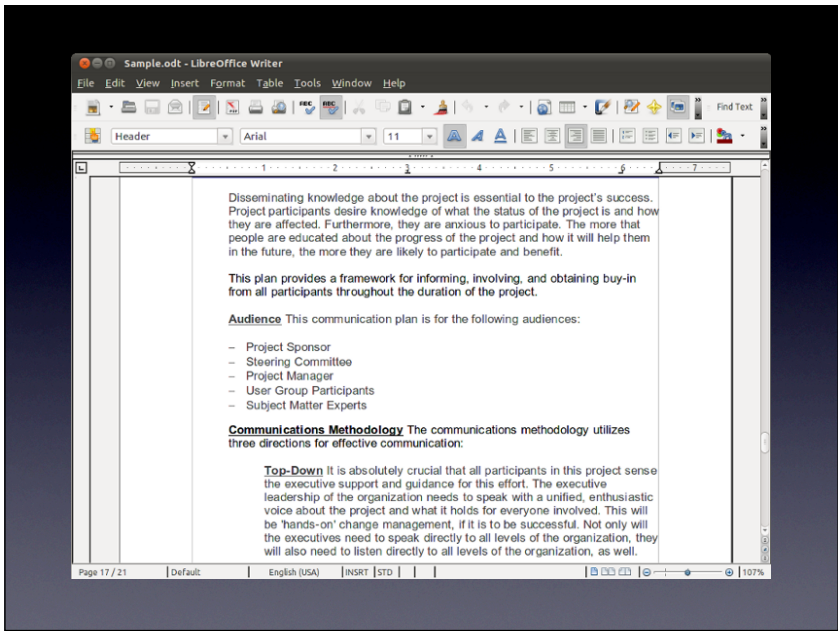




So: LibreOffice (OpenOffice)

### *Pros*

- Fully featured complete Office suite
- Offers 95% of the features
- GUI very similar to Office (pre 2007)



So: Libre Office

### Cons

- Some very advanced features missing
- Not as fully integrated as Microsoft Office
- Varied programming support (i.e. VB support variable or a different macro language)

### IE vs Firefox - talked about this already



### Microsofts Strategy

- Initially ignored it
- Then commissioned internal study that leaked - see Halloween papers
- Claimed it stifled innovation and had a viral nature that threatened intellectual property rights

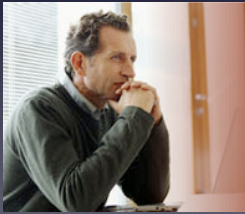


## Microsofts Strategy



### TOTAL COST OF OWNERSHIP

☐ "WILL IT COST ME AN ARM AND A LEG TO DEPLOY AND MAINTAIN?"



### INTELLECTUAL PROPERTY INDEMNIFICATION

☐ "WILL MY BUSINESS BE PROTECTED FROM AN INTELLECTUAL PROPERTY DISPUTE?"

## Microsofts biggest problems -

Commoditization

Paradigm Shift

## Commoditization

Defn: When a product becomes indistinguishable from others like it and consumers buy on price alone, it becomes a commodity

## ASUS eee PC



£199

Comes with Linux,  
Firefox and Open  
Office

Microsoft can't ask  
£300 for OS and  
£250 for Office  
anymore

## Paradigm Shift

Move from desktop / laptops to mobile devices

iPad and Android Tablets - the Post PC era  
has begun



No MS Office here ... yet

## Microsofts Strategy

- Promoting a 'shared source' initiative, where corporate users can view code
- Some evidence that Microsoft may co-operate with the open source community now

## However - Microsofts / Novell agreement

- Microsoft promises not to sue Novells Linux customers because of alleged patent infringements
- No evidence yet .. so FUD?

## Further information

- Look at [www.opensource.org](http://www.opensource.org)
- Links to Free software foundation, Linux documentation project, Free software Bazaar, Mozilla site
- Books: The Cathedral and the Bazaar, Eric Raymond
- Articles: Use Google to discover Microsoft's Halloween documents